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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,466	08/22/2003	Kenzo Matsumoto	JCLA11719	8480
			EXAMINER	
			VRABLIK, JOHN J	
			ART UNIT	PAPER NUMBER
			3748	

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/646,466

Applicant(s)

MATSUMOTO ET AL.

Examiner

John J. Vrablik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-8, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date Dec. 22, 2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: Par.[0036], line 2, "signal-stage" should be --single-stage--; par. [0069], line 5, and par. [0071], line 1, "8" should be --7--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by a volume of an existing space of the refrigerant.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by either Kobayashi (Fig. 7) or Hirakuni (Fig. 3). Each of the references discloses a multi-stage compressor comprising a sealed vessel; an electrical-power element having a rotary shaft; a first rotary compression element (41A in Kobayashi and 3 in Hirakuni) and a second rotary compression element (41B in Kobayashi and 2 in Hirakuni) driven by the rotary shaft in the sealed vessel, wherein the refrigerant compressed by the first

rotary compression element is compressed by the second rotary compression element, and wherein the refrigerant comprises a combustible refrigerant, and the refrigerant compressed by the first rotary compression element is discharge into the sealed vessel and, the discharged refrigerant is under medium pressure and is further compressed by the second rotary compression element as claimed.

Claims 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida (Fig. 1). The reference shows a multi-stage compressor comprising first (5) and second (6) rotary compression elements, wherein a refrigerant compressed and discharge by the first rotary compression element is sucked into, compressed and then discharge by the second rotary compression element, and dimensions of the first and second compression elements are the same, and the second cylinder is expanded outwardly (24) from a suction port in a range of a predetermined angle in a rotation direction of the second roller as recited.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Kobayashi or Hirakuni in view of either Fujio or Kousokabe. The claims differ from the primary references by reciting that the displacement volume ratio of the second rotary compression element to the first rotary compression element is set not less than 60% and not more than 90%. The abstracts of the secondary references teach making this displacement volume ratio between 45% and 65%. It would have been obvious to one having ordinary skill in the art to make the displacement volume ratio of the second rotary compression element in either Kobayashi or Hirakuni to the first rotary compression element to be set not less than 60% and not more than 90%, as taught by either Fujio or Kousokabe, to prevent excessive compression.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Kobayashi or Hirakuni in view of Brown (Figures 4 and 5). The claims add discharge fluid communicating with back pressure chambers to urge each vane against the roller. Brown teaches using discharge pressure in chamber D1 to communicate with back pressure chamber 30 to urge the vane against the roller. It would have been obvious to one having ordinary skill in the art to provide the compressor of either Kobayashi or Hirakuni with discharge pressure in the vane back pressure chambers, as

taught by Brown, to constantly urge the vanes against the rollers for reducing leakage in the compression chambers.

***Allowable Subject Matter***

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10 and 11 allowed.

***Conclusion***

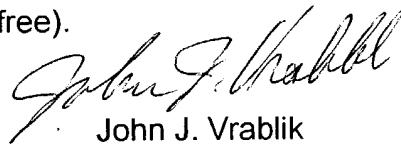
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fujisaki and Nakano 2-294587 disclose multi-stage compressors having biased vanes, and Nakano 2-294588 discharges medium pressure fluid from the first stage into the sealed vessel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Vrablik whose telephone number is (703) 308-2629. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Vrablik  
Primary Examiner  
Art Unit 3748

jiv